Blue*Heat* ***AirTop 3500 Heater***

Webasto
Feel the drive

AirTop 3500 Heater Installation Manual

Dodge Sprinter
(Cargo Van)
2.7 Liter Diesel
Beginning: 2003

Special instructions for these models
Part locations may differ slightly dependent on the vehicle model.

Be sure to check **WWW.techwe-basto.com** for the latest addition of this manual.

Required Tools

– 1/4" Drive Ratchet
– 1/4" Drive 4 inch extension
– 10 mm six point socket, 1/4" drive
– 10 mm six point deep well socket, 1/4" drive
– 3/8" Drive Ratchet
– 3/8" Drive 12 inch extension
– 13 mm socket, 3/8" drive
– 15 mm socket, 3/8" drive
– 17 mm socket, 3/8" drive
– 10 mm combination wrench
– 8 mm nut driver
– Phillips #2 screwdriver
– Combination side-cut/crimping pliers
– Drill
– 2.5 mm (3/32 in.) drill bit
– 8 mm (5/16 in.) drill bit
– 10 mm (25/64 in.) drill bit
– Hacksaw
– Utility Knife
– Mechanic's wire - 2 feet
– Hoisting equipment and safety stands
– Vehicle manufacturer's service reference manual

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DOC. P/N 5001072B KIT P/N 5001246A Printed in USA Webasto Product N.A., Inc.

– Improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide leading to serious injury or death.
– Installation and repair of Webasto heating and cooling systems requires special Webasto training, technical information, special tools and special equipment.
– NEVER attempt to install or repair Webasto heating or cooling system unless you have successfully completed the factory training course and have the technical skills, technical information, tools and equipment required to properly complete the necessary procedures.
– ALWAYS carefully follow Webasto installation and repair instructions and heed all WARNINGS.
– Webasto rejects any liability for problems and damage caused by the system being installed by untrained personnel.

Parts List

Quantity	Part	Part Number
1	Air Heater	5001245A
1	Vehicle Specific Kit	5001246A

Vehicle Information

Manufacturer	Model	Year	Engine Type
Dodge	Sprinter	Beginning: 2003	2.7 Liter - Diesel

Foreword

This installation requires special expertise from a Webasto training course to install a Webasto Air Top 3500, which means that it may only be installed by a specially trained workshop or dealership. Webasto cannot accept any liability for faults and damage caused by the system being installed by untrained personnel.

Scope and Purpose

These non-binding installation instructions are intended to support authorized Webasto trained distributors, dealers and personnel in the installation of the Air Top 3500 and Blue*Heat* Heaters.

These non-binding installation instructions apply to the vehicles listed on the front cover of this installation document unless technical modifications on the vehicle influence the installation, excluding all liability claims. Depending on the version and equipment in the vehicle, changes may be required to the installation work set out in these installation instructions. In any event, however, the directives in the "installation manual" and "operating manual" Air Top 3500 must be followed. Acknowledged engineering conventions must be observed for the installation work.

CAUTION

Location of heater, fuel system and components, wiring and control devices are important for proper operation. Failure to comply with the installation instructions provided may result in poor operation or damage to heater and vehicle components.

ATTENTION

All relevant state and provincial licensing regulations if any, governing the installation and use of auxiliary heating devices must be observed!

Symbol Identification

Symbols that define sections in manual

Mechanical Preparation

Fuel

Electrical

Exhaust

Coolant

Combustion Air Intake

General Symbol Descriptions

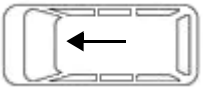
Warning

Refer to Webasto or Manufacturer Manual

Caution

Attention

Flammable or Combustible


Line of Sight/Item Location on Vehicle

General References

– Bare body parts, for example around drilled holes, must be treated with anti-corrosive coating.
– Secure hoses, cables and wiring harnesses with cable ties and fit protective hoses around them at chafing points.
– Fit edge protectors (opened fuel hose) to sharp edges.

Preparation

Heater Kit

– Verify and identify all contents of kit.

CAUTION
For reasons of safety due to the possibility of fuel spillage during the installation of a fuel standpipe, it is recommended there be no more than 1/4 tank or less of fuel present.
If fuel quantity is greater than 1/4 of capacity, make provisions to reduce quantity of fuel.

Heater Installation Site

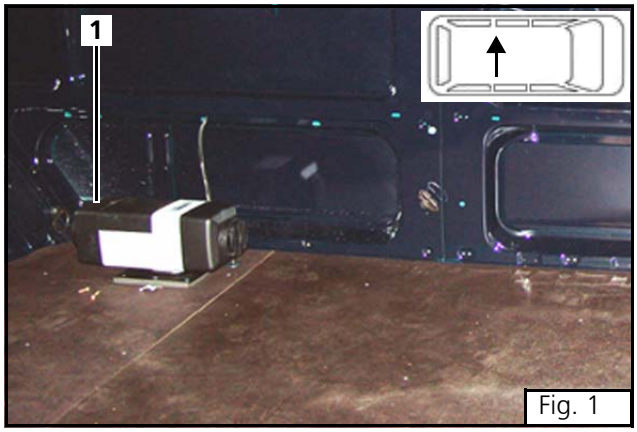


Fig. 1

ATTENTION
Install the AT 3500 just forward of the driver's side rear wheel well.

– (1) Webasto Air Top 3500 Heater

Installation

Component Location - Overview

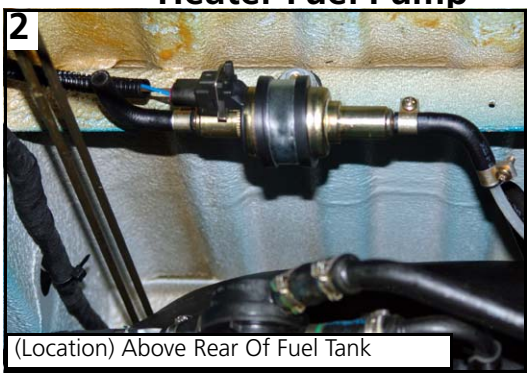
ATTENTION

The standard control device for the AT 2000 is a rheostat switch. The timer control shown is optional and must be purchased separately.

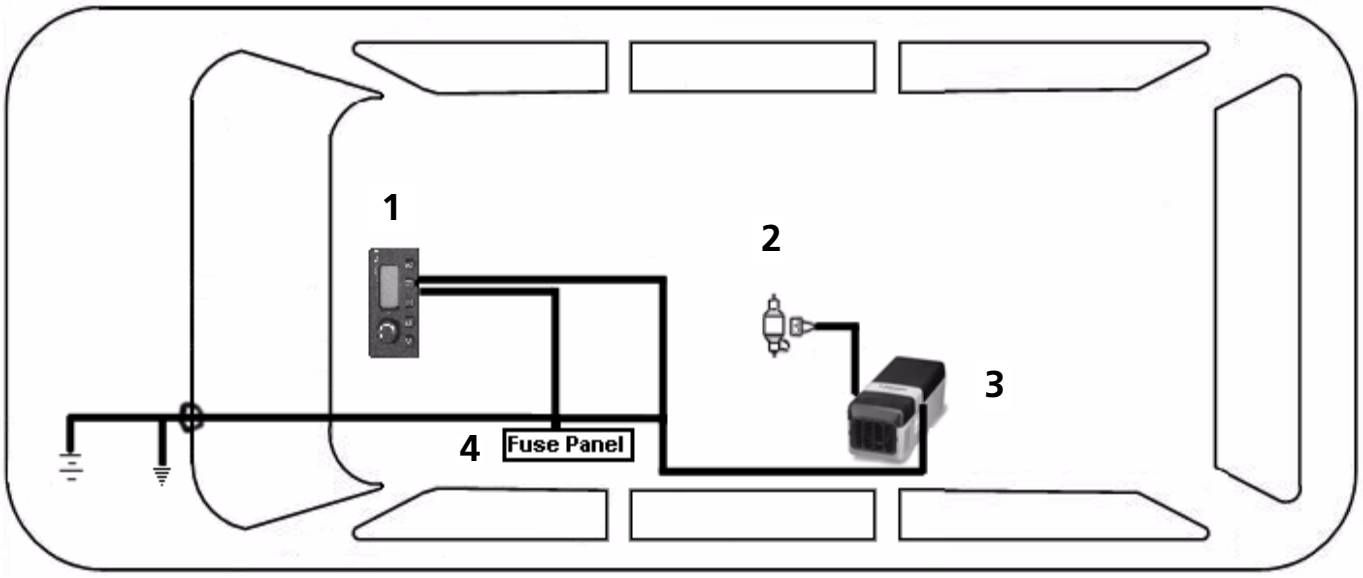
Optional Timer Control

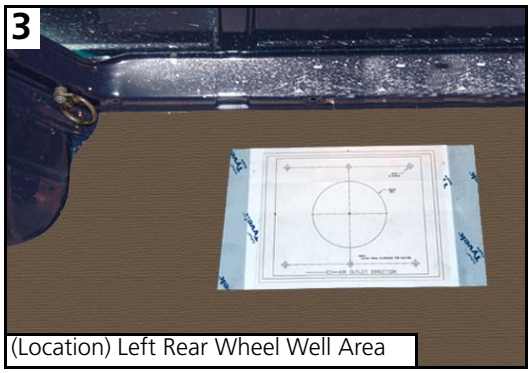
(Location) Center Console

Heater Fuel Pump



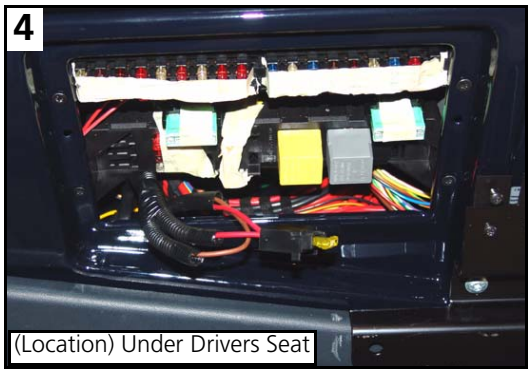
(Location) Above Rear Of Fuel Tank





(Location) Left Rear Wheel Well Area

Heater Cut Out Location

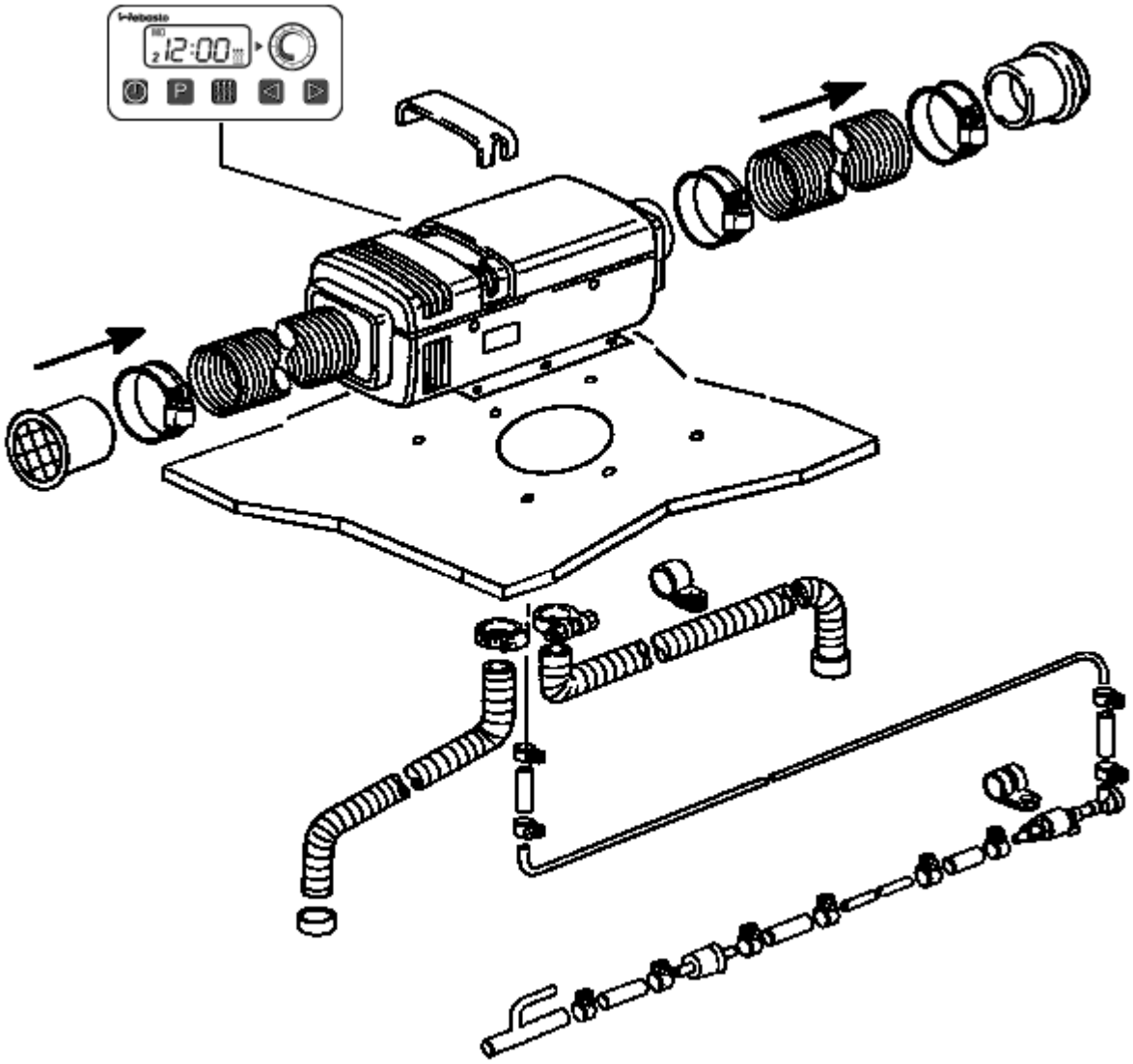


(Location) Under Drivers Seat

Vehicle Fuse Panel

Component Break-down - (Typical)

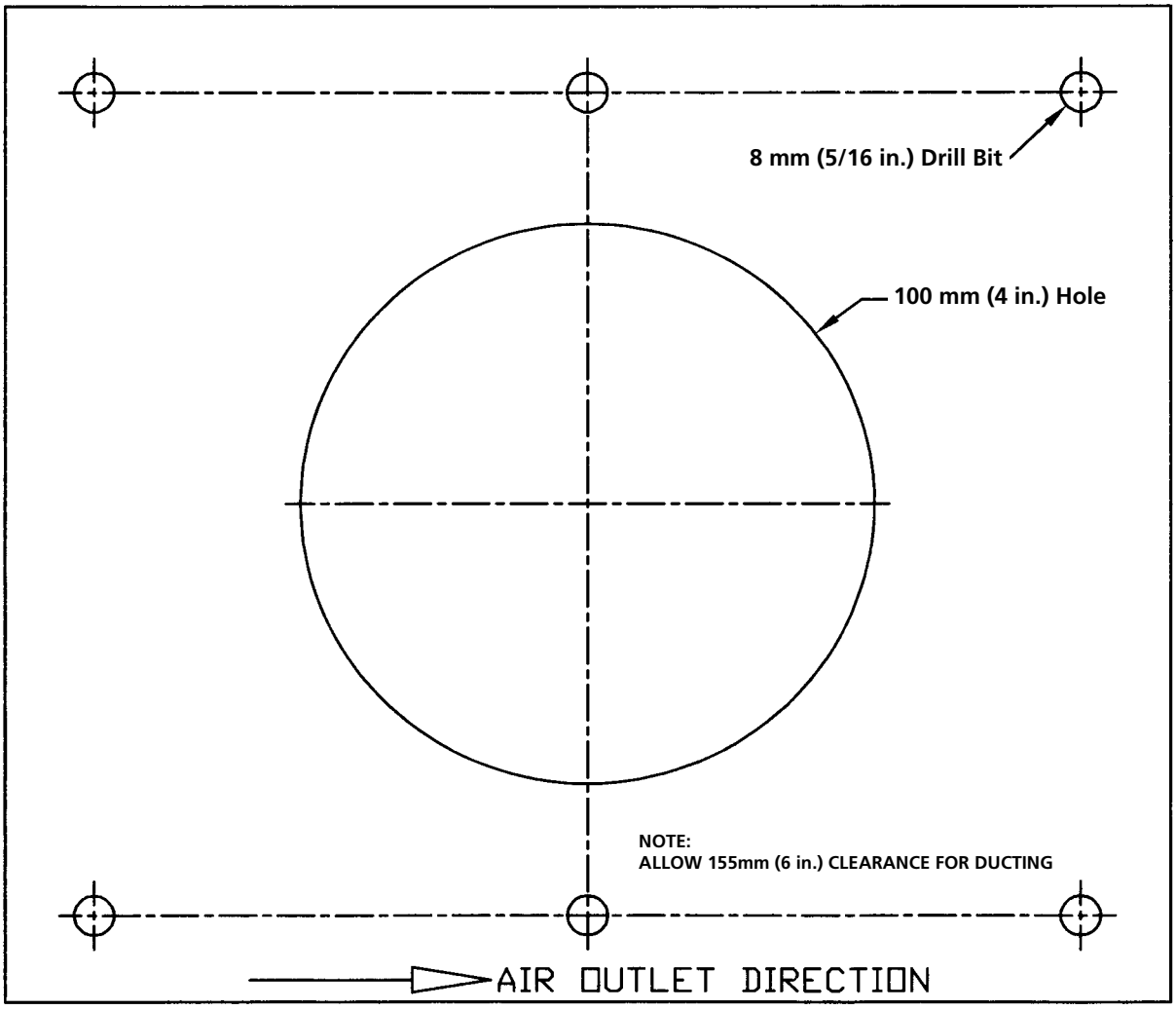
Some components may be different or not included in the vehicle specific (Dodge Sprinter cargo Van) heater kit as shown.



Universal Mounting Plate

A mounting template has been included with the heater kit for ease of installation.

The template details all required hole locations and clearances. Also, check for clearance around sub-floor cross-members, structures and heat sensitive components before proceeding with installation.



TEMPLATE NOT TO SCALE

Mounting the Air Top 3500 Heater

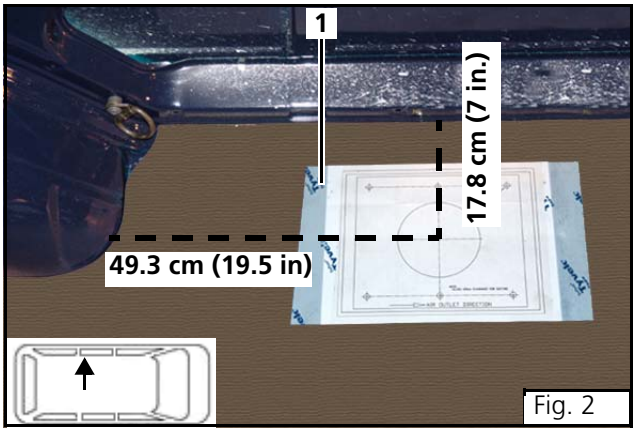


Fig. 2

ATTENTION

Ensure mounting template is square to the interior wall and secured before marking hole locations.

Using the left rear wheel well as a starting position, locate the centerpoint of the mounting template 49.3 cm (19.5 in.) forward of the wheel well and 17.8 cm (7 in.) out from the interior wall.

Using a center punch, mark the locations of each hole on the mounting template.

– (1) Heater Template

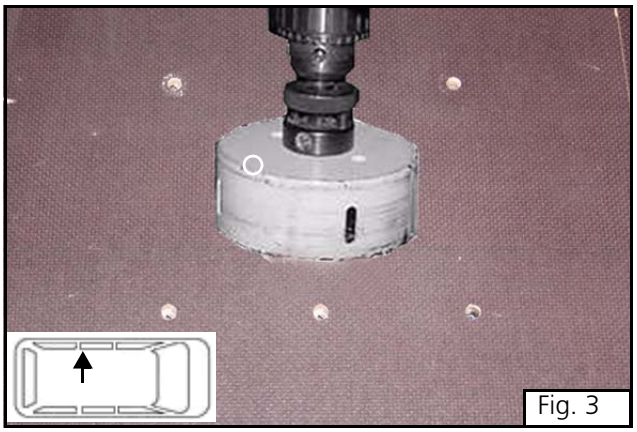


Fig. 3

CAUTION

Always check for obstructions under vehicle before drilling. Remove obstructions if necessary.

Using a hole saw or similar large hole cutter, cut a 100 mm (4 in.) hole through vehicle floor.

Drill six 8 mm (5/16 in.) holes through vehicle floor where marked.

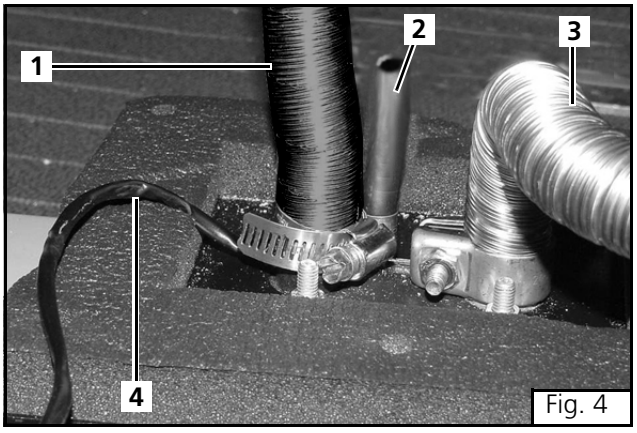


Fig. 4

ATTENTION

Remove approximately 300 mm (11.5 in.) from end of exhaust tube before installing on heater.

Secure the exhaust tube, fuel line coupler, and air Intake tube to heater before installation.

– (1) Combustion Air Intake Tube
– (2) Fuel Line Coupler
– (3) Exhaust Tube
– (4) Fuel Pump Harness

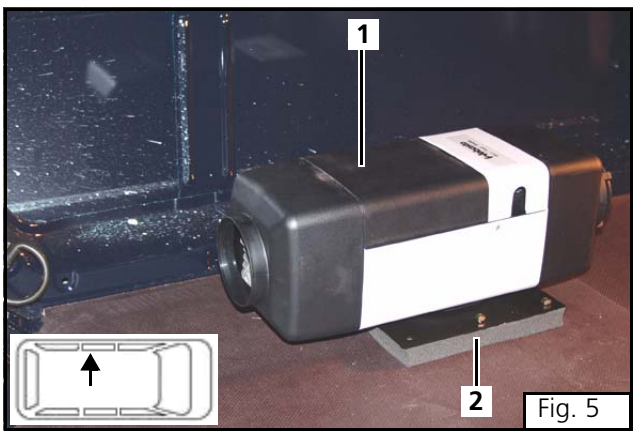


Fig. 5

CAUTION

Torque all mounting bolts evenly. Do not over-tighten mounting fasteners! Mounting plate distortion may occur resulting in fan motor failure. Ensure the heater base and gasket covers the entire hole.

Secure heater to vehicle floor with six bolts, lockwashers, and nuts.

– (1) Webasto AT 3500
– (2) Mounting Plate with Foam Gasket

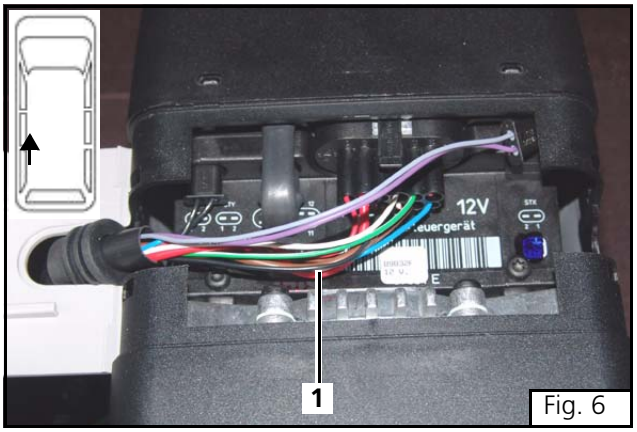


Fig. 6

Installing the Electrical Harness

ATTENTION
Remove top access cover from heater and plug the harness into the control unit receptacle socket as shown in Figure 6.

– (1) Webasto Heater Control Harness

Fig. 7

ATTENTION
Route power and ground wires of heater control harness to the vehicle interior fuse panel (located under the driver's seat).

Secure harness to vehicle with nylon wire ties.

Route Webasto heater control harness along interior wall towards the front of the vehicle as shown in Figure 7.

– (1) Floor Mat Retainer Plate
– (2) Location of Channel to be Removed.

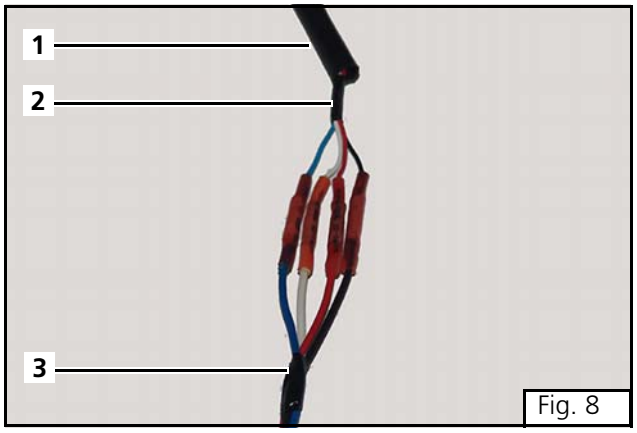


Fig. 8

Extend rheostat control/timer harness with wire provided in kit as shown in Figure 8.

Use harness loom to protect harness extension.

– (1) Harness Loom
– (2) Rheostat Control/Timer Harness Extension
– (3) Rheostat Control/Timer Harness

Fig. 9

Route harness extension under floor matt to the center console area.

– (1) Vehicle floor matt (between front seats)

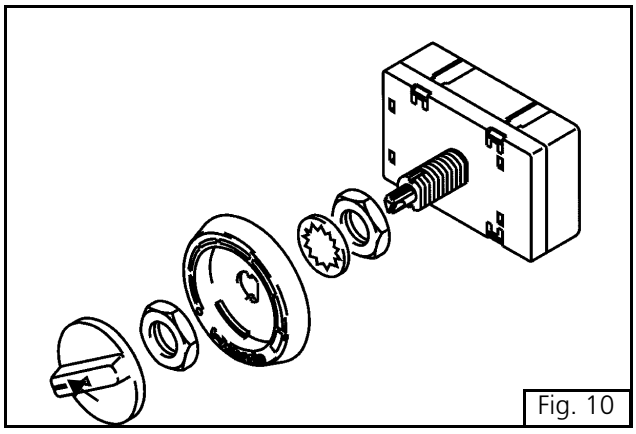


Fig. 10

Rheostat Control Dial Installation (Standard)

CAUTION
Check behind panels for obstructions before drilling holes.

ATTENTION
Before installing the heater control, please confirm the installation location with the customer.

Install rheostat control dial, refer to Figures 10 and 11 for correct installation, and connect wiring harness.

Secure wiring harness with cable ties.

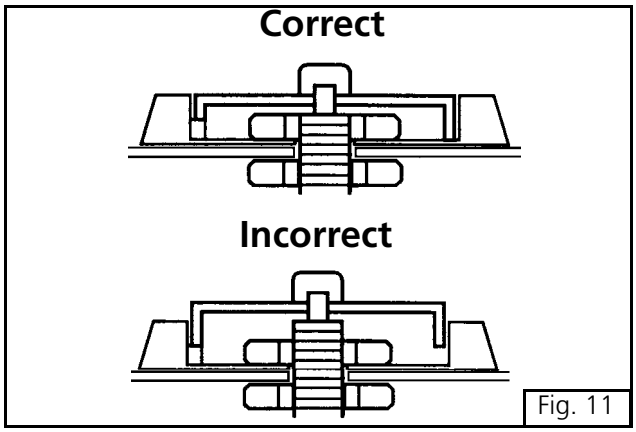


Fig. 11

ATTENTION
The optical fiber must be in contact with the rotary knob.

Proceed to Power Harness Connection.

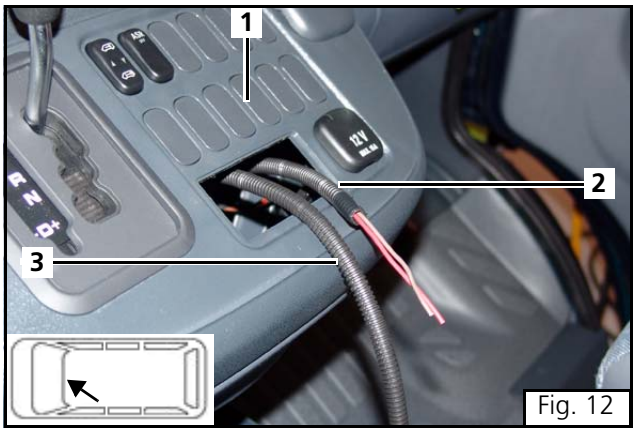


Fig. 12

Optional Timer Installation

Route timer control harness to area shown in Figure 12 (close-out panel removed).

Using wire and harness loom provided, build a power and ground jumper harness that is long enough to reach between the center console and the vehicle interior fuse panel (located under the driver's seat).

Route jumper harness, down the center console and under vehicle floor matt, to interior fuse panel.

– (1) Center Console
– (2) Power and Ground Jumper Harness
– (3) Timer Control Harness

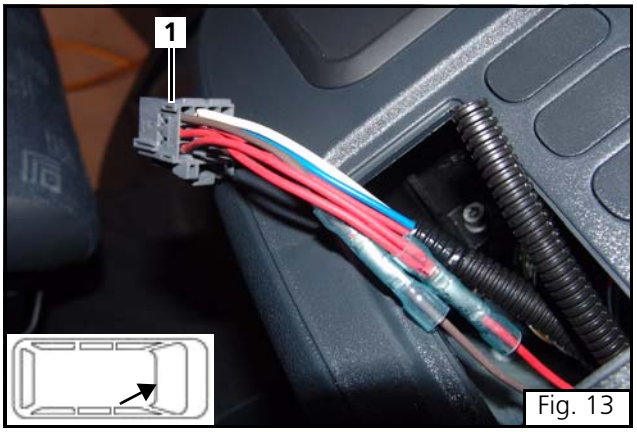


Fig. 13

Wire timer harness connector in accordance to the wiring diagram located on pages 18 and 19.

– (1) Timer Control Harness Connector

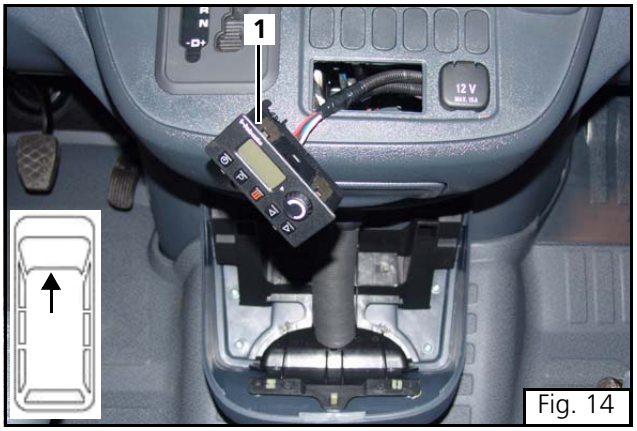


Fig. 14

ATTENTION

Ensure to use 12 volt light bulb in timer.

Install timer (Model 1531) in the auxiliary switch panel located on the center console next to the 12V power socket.

– (1) Timer Control

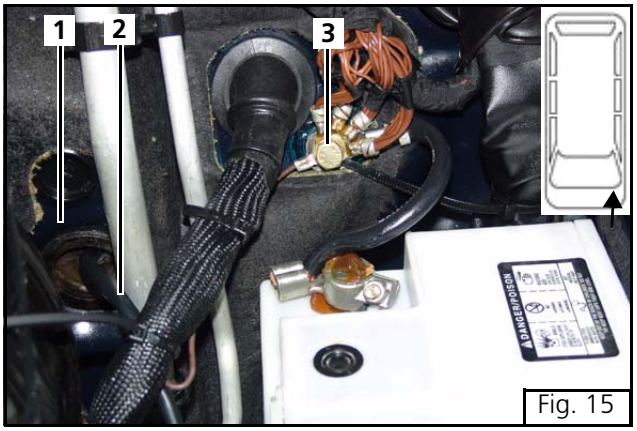


Fig. 15

Power and Ground Harness Connections

Using wire and harness loom provided, build a power and ground jumper harness that is long enough to reach between the vehicle battery and the vehicle interior fuse panel (located under the driver's seat).

Route jumper harness from battery area, through bulkhead grommet, to the interior fuse panel.

Secure ground wire to existing vehicle ground.

– (1) Bulkhead Grommet
– (2) Power and Ground Jumper Harness
– (3) Existing Vehicle Ground Point

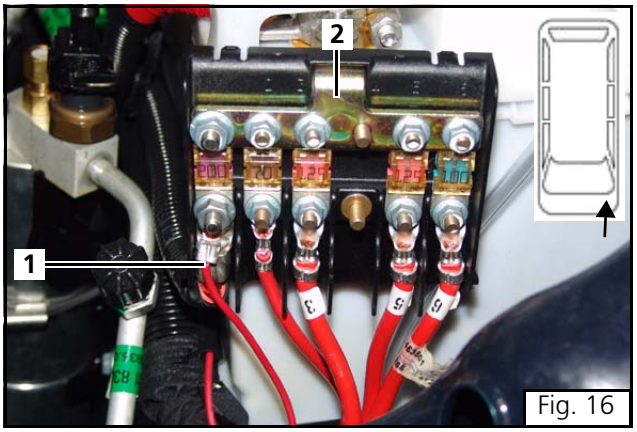


Fig. 16

Secure power wire to vehicle power shunt located in front of the battery.

– (1) Webasto Heater Power Wire
– (2) Power Shunt

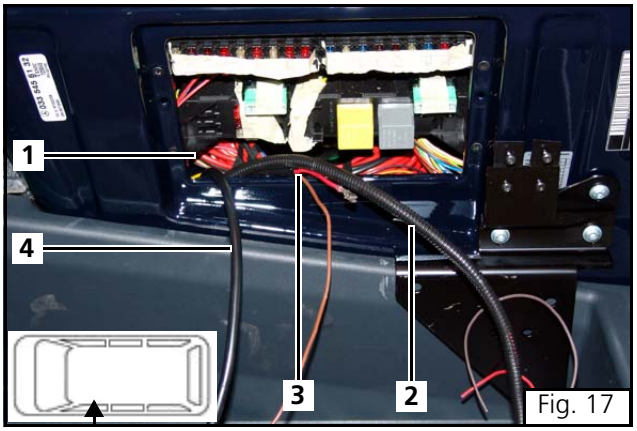


Fig. 17

ATTENTION
Figure 17 shows the location where power and ground is supplied to the Webasto heater and the timer control harnesses.

– (1) Interior Fuse Panel
– (2) Power and Ground Jumper Harness from Timer Control
– (3) Power and Ground Harness from Webasto Heater
– (4) Power and Ground Jumper Harness from Battery Area

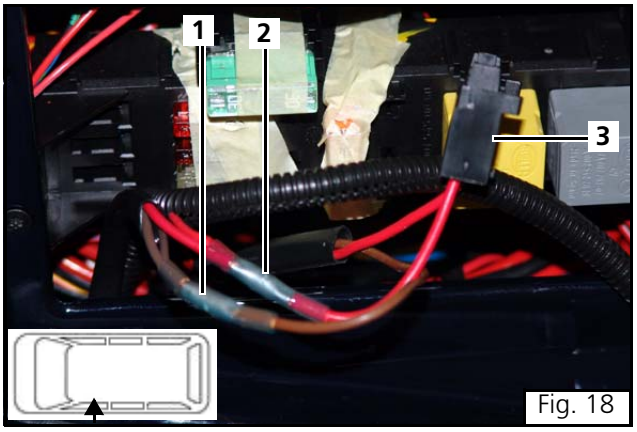


Fig. 18

ATTENTION
Check your wiring! Ensure that all connections have been done in accordance with the wiring diagrams located in the back of this book. Sensitive electronic controls can be damaged if wired incorrectly!

Splice the heater and timer power wires to the jumper harness supply voltage coming from the power shunt.

Install circuit protection (20 amp fuse) on power wire leading to heater and timer control jumper harnesses, using fuse holder provided.

Splice the heater and timer ground wires to the jumper harness ground coming from vehicle ground point.

– (1) Ground Splice
– (2) Power Splice
– (3) Fuse Holder (use 20 amp fuse provided)

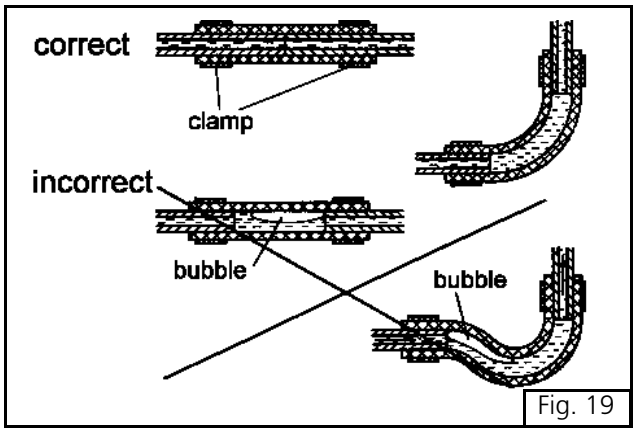


Fig. 19

Integration into Fuel System

ATTENTION
Ensure the fuel lines are fully seated within the fuel line couplers and any 90 degree bends are not buckled. Refer to Figure 19.

Tighten all fuel line clamps to 1.0 - 1.4 Nm (8.8 - 12.4 lb.-in.).

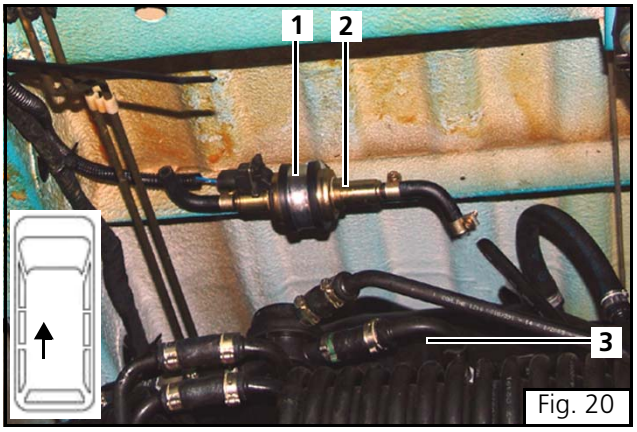


Fig. 20

CAUTION
Fuel pump MUST be mounted horizontally to function correctly.

ATTENTION
Install fuel line couplers on fuel pump prior to installation. Tighten inboard fuel line clamps.

Use existing hole and p-clamp provided to mount heater fuel pump.

– (1) Fuel Pump, P-Clamp, and Rubber Insulator
– (2) Heater Fuel Pump
– (3) Fuel Cooler (rear of tank)

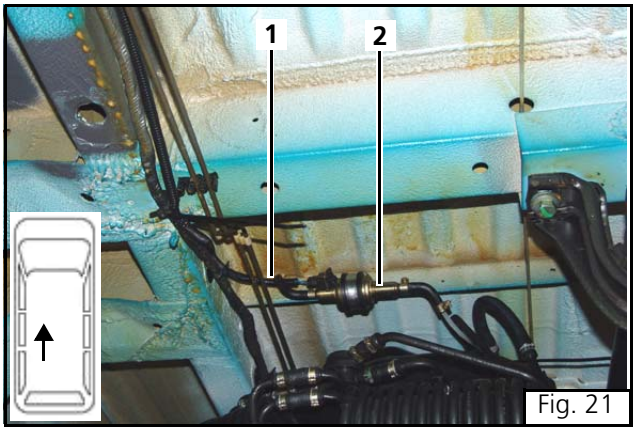


Fig. 21

ATTENTION
Extend fuel pump harness with jumper provided. Route fuel pump harness from heater to fuel pump mounting location. Secure harness to existing vehicle lines with nylon wire ties.

Connect fuel pump harness to fuel pump.

– (1) Fuel Pump Harness
– (2) Fuel Pump

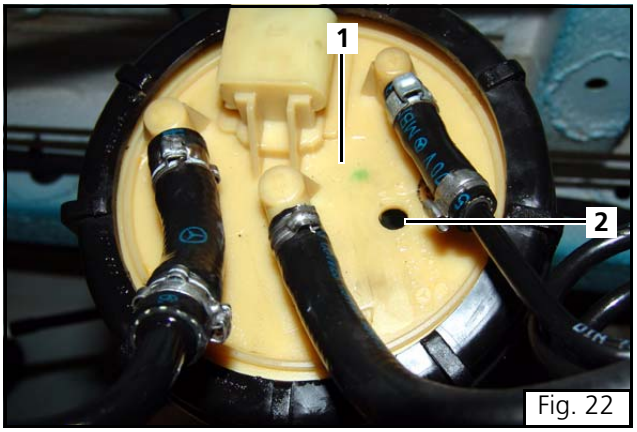


Fig. 22

CAUTION
For reasons of safety due to the possibility of fuel spillage during the installation of a fuel standpipe, it is recommended there be no more than 1/4 tank or less of fuel present.
If fuel quantity is greater than 1/4 of capacity, make provisions to reduce quantity of fuel.

ATTENTION
Lower and support fuel tank. Remove fuel sender from tank.

Ensure standpipe location does not interfere with fuel sender float movement.

Drill a 8.5 mm (21/64 in.) hole through fuel sender.

– (1) Fuel Sender
– (2) Standpipe Hole

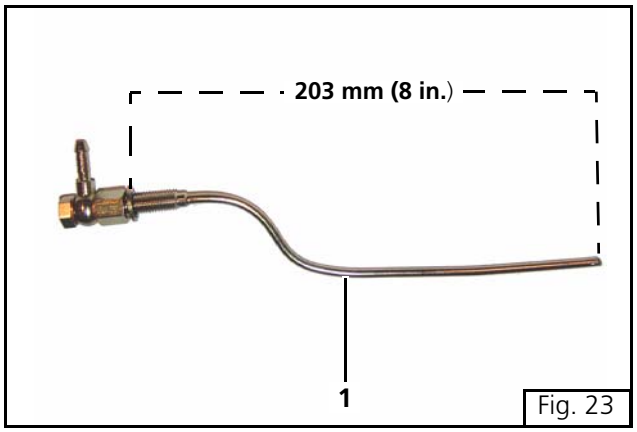


Fig. 23

Standpipe Assembly

ATTENTION
The standpipe tube should terminate approximately 25 mm (1in.) off bottom of tank when installed.

Ensure standpipe does not interfere with the float arm.

Cut standpipe at a 45 degree angle and remove burrs before installation.

Form standpipe as shown in Figure 23.

– (1) Standpipe

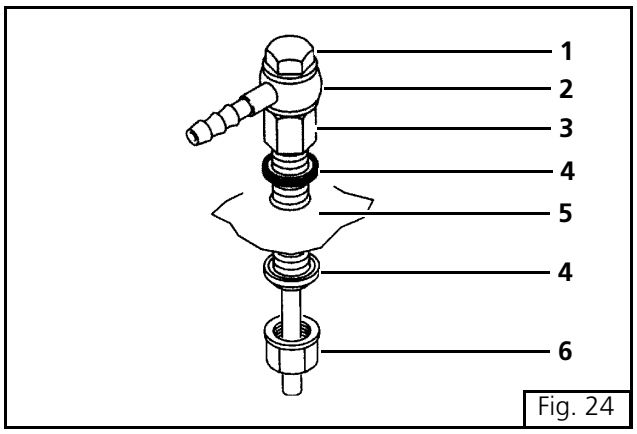


Fig. 24

Figure 24 Legend

1 Banjo Bolt
2 Banjo Fitting - 90 Degree
3 Standpipe
4 Sealing Washer
5 Fuel Tank or Sender Plate
6 Locknut

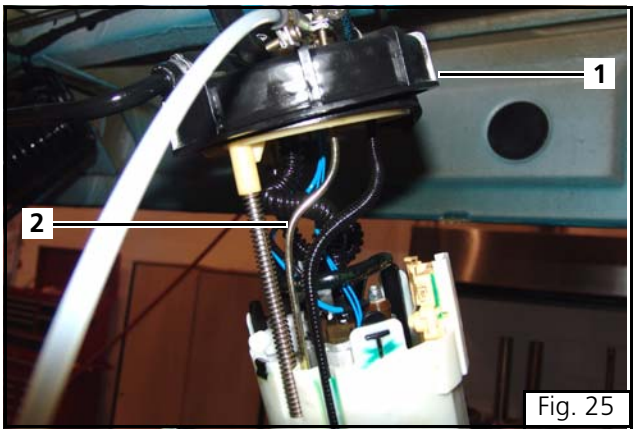


Fig. 25

ATTENTION
Ensure standpipe does not interfere with the fuel sender's ability to compress.

Insert standpipe into fuel sender where shown in Figure 25.

– (1) Fuel Sender
– (2) Standpipe

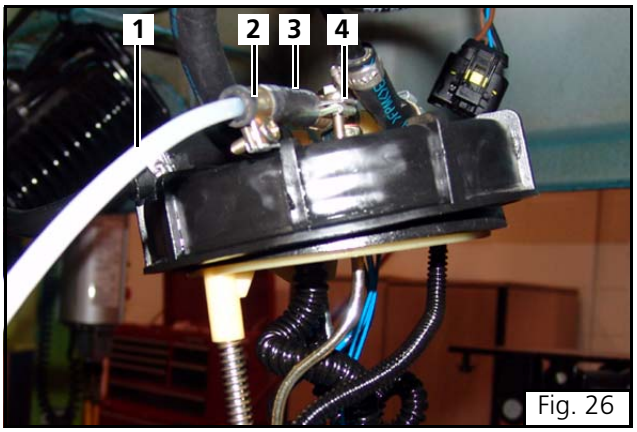


Fig. 26

ATTENTION
Tighten all fuel line clamps to 1.0 - 1.4 Nm (8.8 - 12.4 lb.-in.).

Replacement clamps are provided in the kit for OE fuel lines, use if necessary.

Secure fuel line to existing vehicle lines with nylon wire ties.

Install fuel line coupler on standpipe with clamp.

Connect fuel line to coupler with clamp.

Route fuel line to fuel pump inlet.

– (1) Heater Fuel Line
– (2) Fuel Line Clamp
– (3) Fuel Line Coupler
– (4) Standpipe

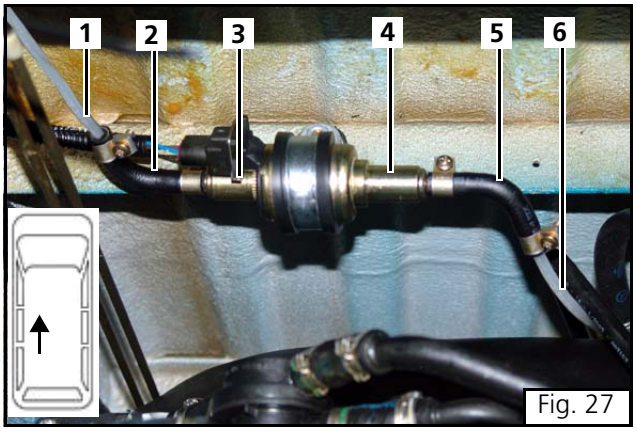


Fig. 27

ATTENTION
Tighten all fuel line clamps to 1.0 - 1.4 Nm (8.8 - 12.4 lb.-in.).

Secure fuel line to existing vehicle lines with nylon wire ties.

Connect fuel line to the 90 degree elbow at the fuel pump inlet.

Connect the remaining section of fuel line to the 90 degree elbow at the fuel pump outlet.

Route fuel line to the fuel line coupler at the heater.

– (1) Heater Fuel Line - to heater
– (2) 90 Degree Fuel Line Coupler
– (3) Fuel Pump Outlet
– (4) Fuel Pump Inlet
– (5) 90 Degree Fuel Line Coupler
– (6) Heater Fuel Line - from fuel sender

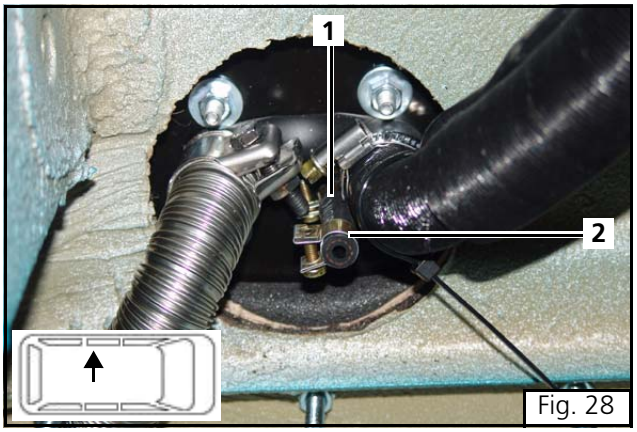


Fig. 28

ATTENTION
Tighten all fuel line clamps to 1.0 - 1.4 Nm (8.8 - 12.4 lb.-in.)

Connect fuel line from fuel pump outlet to fuel line coupler at heater with clamp.

– (1) Fuel Line Coupler
– (2) Fuel Line Clamp

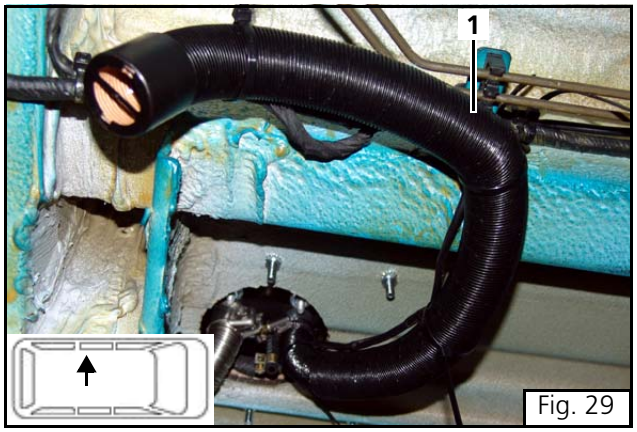


Fig. 29

Combustion Air Intake

Route combustion air Intake tube from heater towards rear of vehicle pointing tube end downward. Secure with nylon wire ties.

– (1) Combustion Air Intake Tube

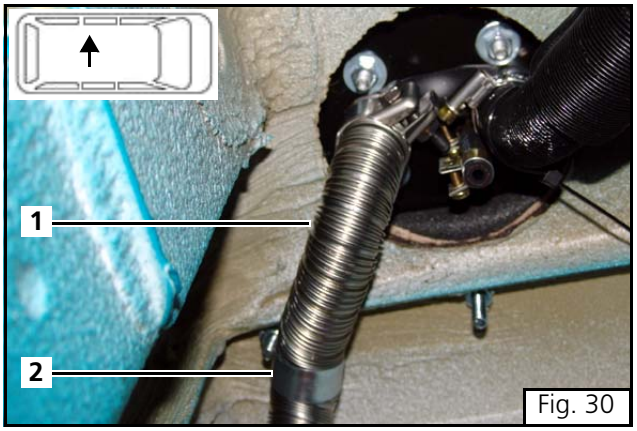


Fig. 30

Exhaust Routing and Installation

Route exhaust tube from heater towards rear of vehicle.

Secure exhaust tube to heater mounting bolt with supplied P-Clamp.

– (1) Exhaust Tube
– (2) P-Clamp

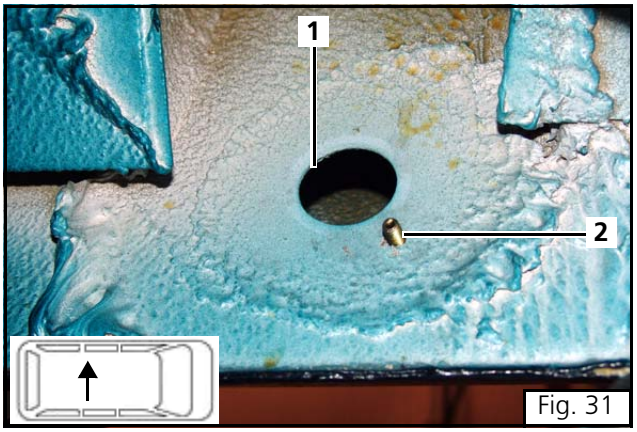


Fig. 31

ATTENTION
Remove OE grommet from large hole in underbody and re-install after mounting exhaust tube.

Drill a 5.5mm hole through inner wall of vehicle underbody where shown in Figure 31.

Insert P-Clamp mounting bolt using existing large hole in underbody.

– (1) Large Hole in Underbody
– (2) P-Clamp Mounting Bolt

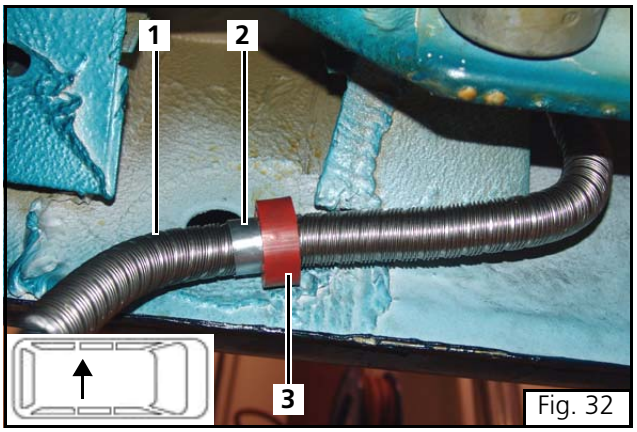


Fig. 32

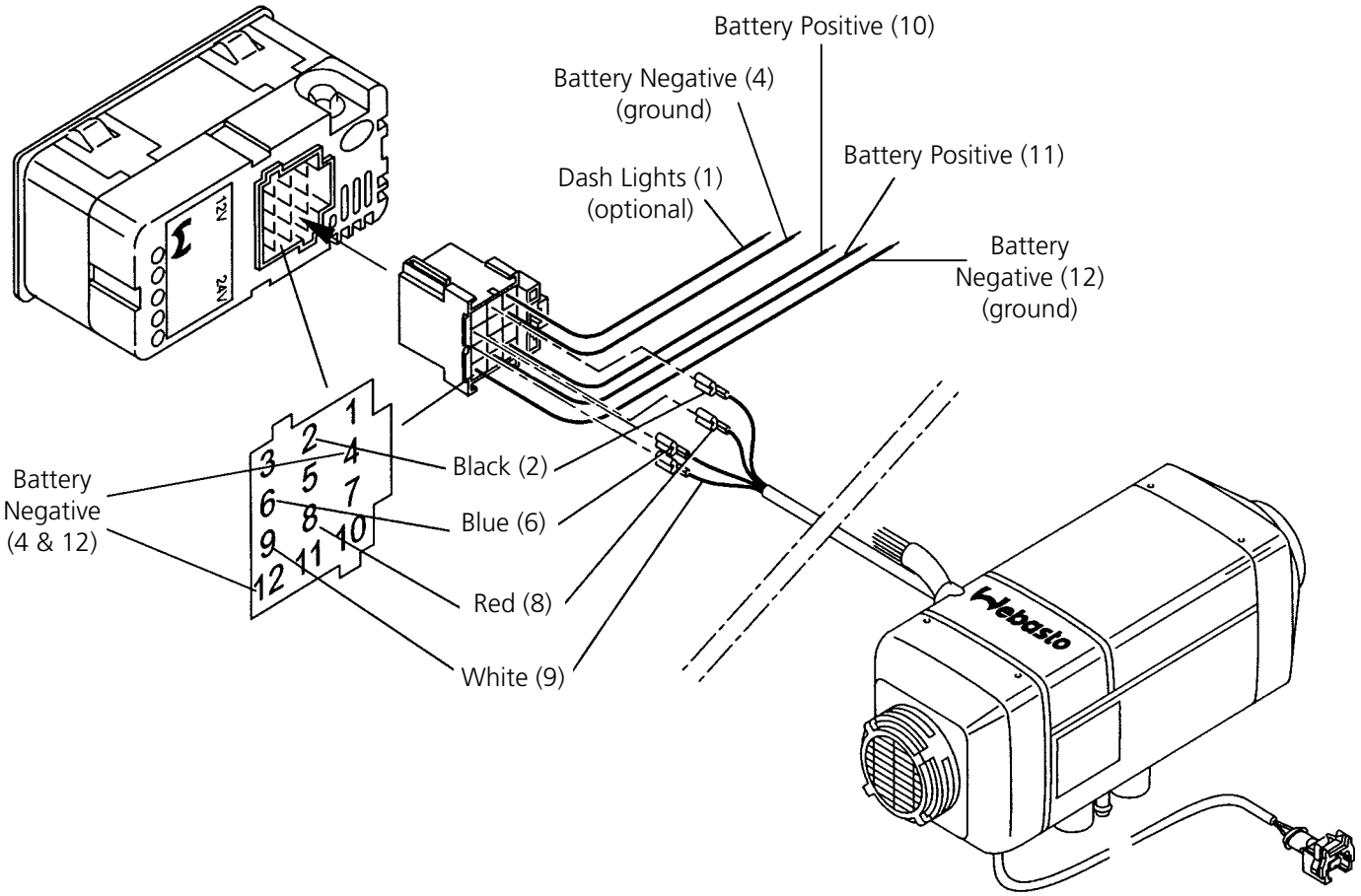
ATTENTION
Ensure end of exhaust tube is pointing downwards.

If heat insulators are used, ensure they are properly positioned and that the tail pipe is positioned downward.

Secure exhaust tube to vehicle with P-Clamp.

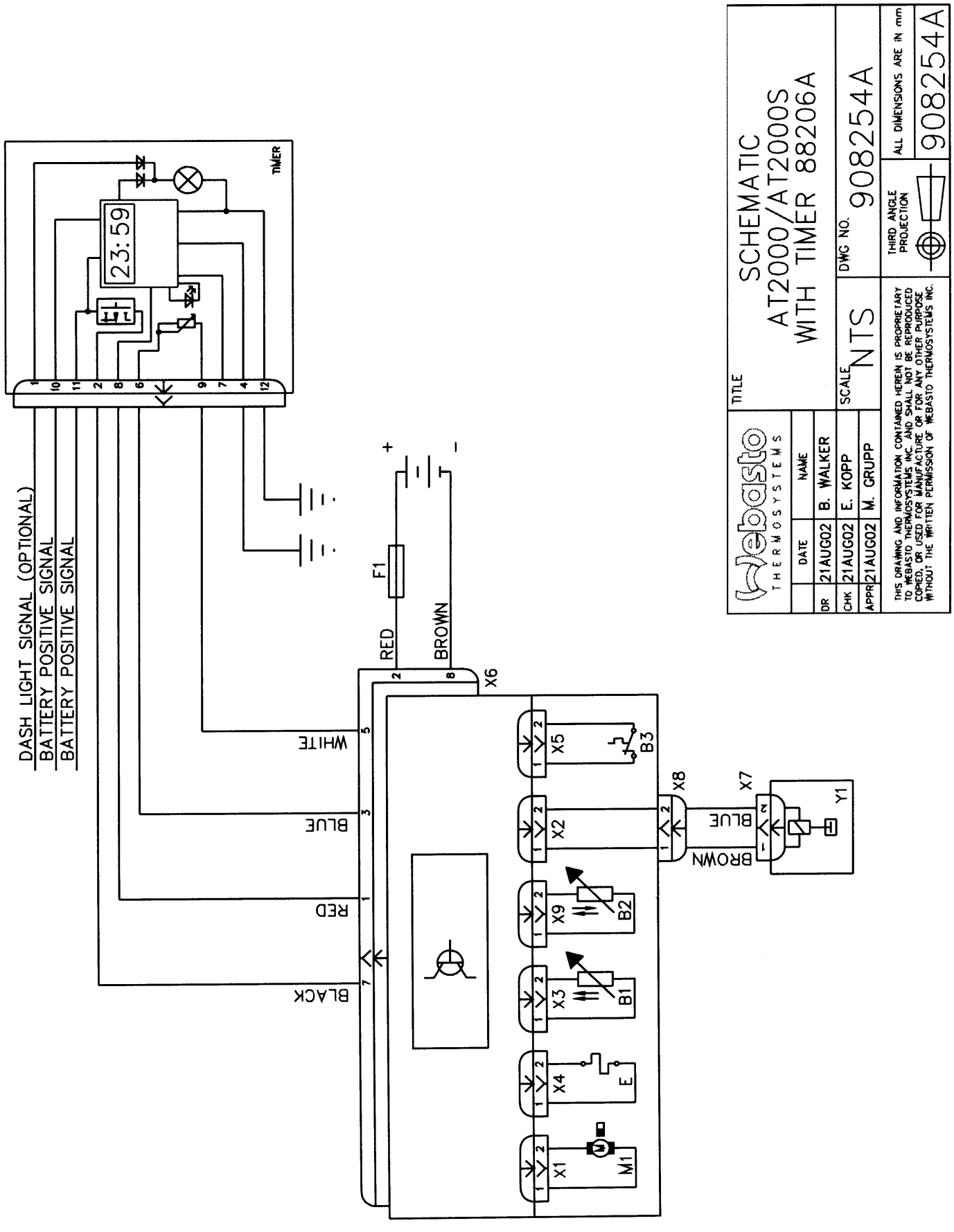
– (1) Exhaust Tube
– (2) P-Clamp
– (3) Insulator

Optional Timer Wiring Diagram

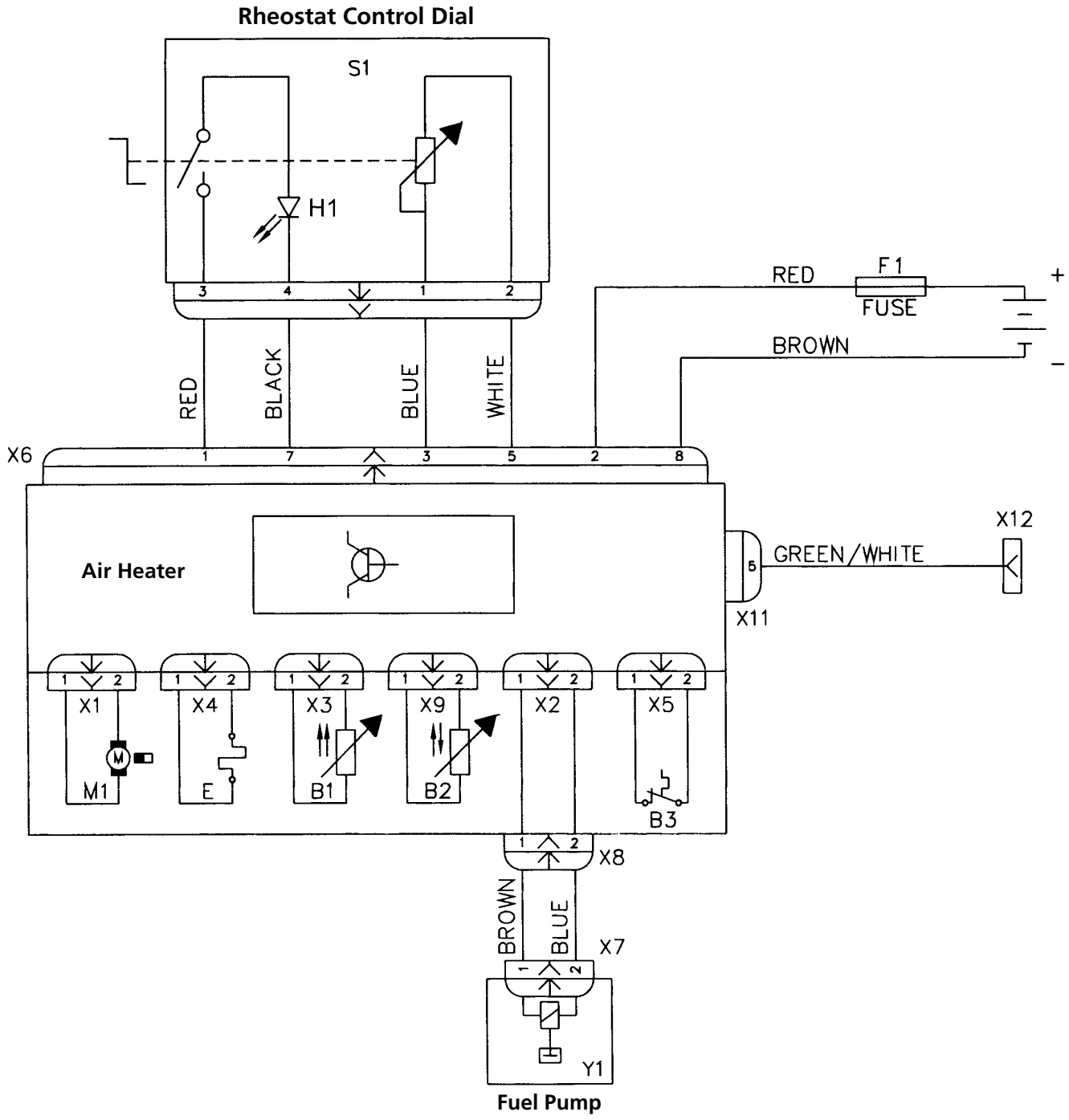


Blue*Heat* with optional timer 88206A (7-Day Digital Timer Model 1531 with Temperature Rheostat)

Wiring Schematic - Optional Timer



Wiring Schematic - Rheostat Control Dial



Concluding Work

1. Install all vehicle parts, panels and components removed during heater installation.
2. Secure all loose lines and cables with nylon cable ties.
3. Spray the heater components and electrical connections with an anti-corrosive wax coating.

Final Inspection

Inspect installation for:

– loose fasteners.
– Exhaust system routing and clamp tightness.
– Combustion air intake tube routing and clamp tightness.
– Loose fuel line clamps.
– Routing of fuel lines and fuel lines securely tied and protected against chafing and related damage.
– Loose wiring connections and battery connections.
– Routing of wiring harness and wiring harness securely tied and protected against chafing and related damage.

Initial Start-up

1. Set time and day of week on heater timer according to operating instructions found in the owners manual.
2. Switch on the Webasto heater by means of the instant heat button on timer and check:
   – Timer panel and instant heat indicator illuminates.
   – Initiation of start-up sequence.
   – Successful start-up and operation (heat produced at heater outlet).

ATTENTION

More than one start-up attempt of the heater may be required to purge air from fuel system before heater will start. Cycle heater Off and On after each failed start attempt until heater starts and runs successfully. Should the heater fail to start or operate correctly, call your Webasto technical representative at:
1-800-555-4518

Heater Maintenance

The Webasto Blue*Heat* heater is designed for minimal maintenance. Under normal circumstances it should be inspected for proper function at least once annually, preferably, just prior to the heating season.

To ensure trouble-free operation, the following should be part of an annual and periodical inspection:

1. Operate the heater a minimum of 10 minutes every month to keep fresh fuel in the system and the fuel pump lubricated.
2. Keep the heating air outlet clear of obstructions.
3. Keep the heater inlet grille clear of obstructions.
4. Inspect the combustion air tube and exhaust tube for obstructions and damage. Check to ensure they are securely attached to the heater and vehicle. Repair damaged items where necessary.
5. Inspect the fuel system and all connections for leaks. Tighten clamps if loose. Ensure fuel line is well secured to the vehicle. Replace fuel filter if equipped.

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Detailed user feedback is extremely valuable to us in producing accurate, comprehensive, and useful documentation. Please complete the relevant parts of the form below; your comments and suggestions will help us improve our documentation. Thank you.

	Unsatisfactory				Excellent
Please rate the overall usefulness of the documentation.	1	2	3	4	5
Rate the completeness and clarity of the instructions: did the procedures provide enough detail?	1	2	3	4	5

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